

thickness is in the majority of species about equal to the diameter of one or two pores of the lattice. Sometimes they are much stronger, rarely thinner.

The form of the radial main-spines is not very variable, usually it is cylindrical or cylindro-conical, rarely angular, prismatic or pyramidal. Sometimes they are straight (perfectly radial), at other times more or less irregularly curved. Usually they are simple, rarely branched; the branches are always very irregular and exhibit a remarkable tendency to unite by conrescence (figs. 3, 4). Some thicker forms of spines exhibit a remarkable structure, the surface being covered with small dimples and spinules between them (fig. 1); sometimes the dimples are hexagonal (fig. 5*a*). In the axis of the thicker spines there is often visible the same axial filament or funicle which we find in many other PHÆODARIA, more rarely a hollow axial canal.

The mouth of the shell is usually circular, more rarely polygonal or irregularly roundish (fig. 2). It is either quite smooth (figs. 3, 5, 7) or armed with a corona of strong teeth (figs. 1, 4, 6). These teeth are different from the other spines of the shell; they are much thicker than the radial bristles, and shorter than the main-spines. Their number varies between three and twenty, usually between five and seven. They are usually parallel to the main axis, which is determined by the excentric position of the mouth and the centre of the sphere (figs. 1, 6). The teeth are usually conical, more or less irregular in size and form, more rarely of equal size. The corona of teeth is usually sharply separated from the surrounding lattice-work of the shell, but has no influence on its regular spherical form.

The *central capsule* of the Castanellida immediately determines beyond doubt their true PHÆODARIAN nature; it lies excentrically in the cavity of the enclosing shell, and is surrounded at the oral pole by the large and dark phæodium. The latter covers the radiate operculum of the capsule membrane and the tubular proboscis, which arises from it and is directed towards the shell mouth. Usually the diameter of the spherical central capsule is about one-third of the shell diameter, rarely one-quarter only, and in a few cases it attains nearly its half. The calymma, therefore, is larger than the capsule, and fills up the whole cavity of the shell which is not occupied by the latter. The greater part of the calymma again is filled up by the dark green or brown, sometimes black phæodella, the roundish granules which compose the voluminous non-transparent phæodium. Sometimes the latter proceeds through the mouth and is partially placed outside the shell (fig. 5).

The astropyle, or the main-opening of the central capsule, is placed on the oral pole of its main axis, while its radiate operculum and the tubular proboscis arising from it possess the same structure as in the other PHÆODARIA. But the two lateral parapylæ or accessory openings which are present in the majority of the latter seem to be absent in the Castanellida as well as in the Medusettida and the Challengerida. I could never observe a trace of them. The proboscis is a small cylindrical tube and is directed towards the